Brian D. Greenwald, M.D. Clinical Office: JFK Johnson Rehabilitation Institute 65 James Street Edison, NJ 08818

Mailing Address: 765 Mountain Avenue #312 Springfield, New Jersey 07081 (917) 484-2506

August 11, 2013

Eleanor L. Polimeni, Esq. Finkelstein & Partners, LLP 1279 Route 300 P.O. Box 1111 Newburgh, NY 12551 Phone #: 845-562-0203 Fax #: 845-562-3492

RE: Jennie Carlucci DOB: 02/09/1954 DOI: 04/10/2009

Dear Ms. Polimeni:

The following is a narrative report regarding injuries sustained by Ms. Jennie Carlucci on April 10, 2009. Extensive records were reviewed as discussed below. Records include my treatment records for Ms. Carlucci at Mount Sinai Medical Center and JFK Johnson Rehabilitation Institute.

#### Records Reviewed:

- 1. Reports by Dr. David Shumsky.
- 2. School records from Nyack College.
- 3. Records from Dr. John MacGillivray.
- 4. Records from Dr. Galia Meiri.

Page: 2

- 5. Interviews of Ms. Carlucci's family members and associates of Ms. Carlucci.
- 6. Records from Crystal Run Healthcare.
- 7. Records from Dr. Andrew Faskowitz.
- 8. Records from Orange Urgent Care.
- 9. Records from Orange Regional Medical Center.
- 10. Records from Advantage Physical Medicine and Rehabilitation.
- 11. Records from Dr. Kaiyu Ma.
- 12. Records from Helen Hayes Hospital.
- 13. Records from Dr. Ronald Israelski.
- 14. Records from Dr. Jacob Jacoby.
- 15. Records from Samuel Koszer.
- 16. Records from Debra Sheafe, LMT.
- 17. Pharmacy records.
- 18. Records from Dr. David Albinder.
- 19. Records from Dr. Stefan Chevalier.
- 20. Records from Dr. Mary Davidian.
- 21. Records from Dr. Gunther Goldsmith/Dr. Howard Begel.
- 22. Records from Hudson Valley Ear, Nose, and Throat.
- 23. Records from Dr. Mathew Liby.
- 24. Records from Memorial Sloan-Kettering Cancer Center.
- 25. Records from Monroe Area Medical Associates.
- 26. Records from Orange Cardiology, PLLC.
- 27. Records from Orange Regional Medical Center, diagnostic imaging department.
- 28. Records from Dr. Steven Paldowicz,
- 29. Records from Dr. Charles Peralo.
- 30. Records from Dr. Daniel Rohmer.

Page: 3

- 31. Records from Southside Hospital.
- 32. Records from Dr. Jay Weitzer.
- 33. Medical Life Care Plan with vocational assessment of David McCoy.
- 34. School records from Orange County Community College.
- 35. Records from Dr. Robin Karpfen of Crystal Run Healthcare.
- 36. Records from Dr. Serhat Aytug of Crystal Run Healthcare.
- 37. Records from Dr. Jack Nizewitz and Gary Lake, PC.
- 38. Records from Dr. Sergey Koyfman of Hudson Valley Ear, Nose, and Throat.
- 39. School records from Marist College.

#### **Record Review:**

#### Records prior to 04/10/2009:

Reviewed records from Dr. Galia Meiri, dermatologist, beginning on 02/22/1989 through 07/06/2011. His records were routine and non-revealing.

Reviewed additional records from Crystal Run Healthcare from 01/15/1992 through 10/17/2012 including from Reviewed records from Dr. Daniel Rohmer. In January of 2005 Ms. Carlucci was diagnosed with a central serous retinopathy. Ms. Carlucci was followed for benign thyroid nodules. These records were otherwise routine and non-revealing.

Reviewed records from Dr. Lewis Broslovsky/Crystal Run Healthcare, gynecologist, records start on 08/14/2002, reviewed records through 10/29/2010. Records were routine and non-revealing.

Page: 4

Reviewed dental records from Dr. David Albinder, dentist from 05/02/2005 through 01/16/2013.

Ms. Carlucci was seen at Advantage Physical Medicine and Rehab on 12/26/2007 for her left wrist pain. He notes that she has a past medical history of hypertension, osteoporosis, mitral valve prolapse, and anxiety.

Reviewed records from Dr. Gunther Goldsmith and Dr. Howard Begel, dentist. These were routine and non-revealing.

Reviewed records from Orange Cardiology starting on 01/30/2009. Exercise stress test on 02/18/2009 was normal. Echocardiogram on 02/19/2009 showed normal left ventricular size and function, aortic sclerosis, and mild mitral insufficiency.

Carotid duplex on 03/17/2009 showed no evidence of stenosis bilaterally.

### Records prior to 04/10/2009:

Ms. Carlucci was seen in Orange Urgent Care on 04/10/2009. Her complaint was that a 70-pound box had fallen on the top of the left side of her head and she had neck pain for one hour. In greater detail it says that she has bent down and two 35-pound boxes hit the top of her head. No loss of consciousness. She was complaining of a headache. She had a pain down the left side of her neck. She could not rotate her neck. She had no nausea or vomiting. No visual changes. On examination, she had swelling and ecchymosis on the top of her head. It was tender. Decreased rotation of her neck to the left and decreased extension. It was tender along the left side of the vertebrae. The diagnoses were head

Page: 5

contusion and cervical sprain. She was given a prescription for Flexeril and told to do heat and rest.

Dr. Carmen Martinez, neurologist at Crystal Run Healthcare initially evaluated Ms. Carlucci on 04/13/2009. Her chief complaints were headaches and neck pain. Since the injury at Wal-Mart she was having neck pain and headaches. The assessment was headaches and forgetfulness; posttraumatic; neck pain; muscle spasm. The plan was MRI of the brain, MRI of the cervical spine, Soma compound, Naprosyn, local heat, and activity as tolerated. He limited her driving, working at heights after taking the Soma.

CT of the brain without contrast on 04/10/2009, Orange Regional Medical Center. Impression was no evidence of intracranial injuries; mild cerebral cortical atrophy. Recommendation was that if symptoms persist MRI correlation was advised for further evaluation.

CT of the cervical spine on 04/10/2009, Orange Regional Medical Center. Impression was no evidence of fracture or subluxation. Cervical spondylosis at C4-C7 levels.

Reviewed Rite Aid Pharmacy records from 04/10/2009 through 04/30/20120. Additional pharmacy records from Middletown Pharmacy.

MRI of the brain on 04/14/2009. Impression was unremarkable MRI of the brain.

Follow-up with Dr. Martinez on 04/29/2009. Ms. Carlucci was still complaining of difficulty remembering events and appointments. The assessment was forgetfulness; posttraumatic; headache plus neck pain; improved, muscle spasm.

Page: 6

The plan was neuropsychological evaluation, Naprosyn, Flexeril, activity as tolerated.

Dr. Daniel Perri from Advantage Physical Medicine Rehabilitation evaluated Ms. Carlucci on 05/05/2009. She presented with neck pain and right shoulder pain. She describes that she was shopping at Wal-Mart and was hit in the head by several boxes of shelving. "She has been having memory problems and does not recall all the details. She has been having neck pain with radiation into both shoulders. No weakness or paresthesias." "She has been having frequent headaches and memory problems." She had seen Dr. Martinez, neurologist. The assessment was cervical radiculitis; shoulder disorder bursa/tendon; cerebral dysfunction, mild brain injury due to accident.

Ms. Carlucci was seen by the physical therapist at Advantage Physical Medicine Rehabilitation initially on 05/08/2009. She reported that after the accident at Wal-Mart she did not have a loss of consciousness but did feel dizzy. The pain was improving but she still had constant headaches. She also presented with neck, bilateral shoulder, and thoracic pain. Reviewed therapy notes through 06/08/2009

Dr. Charles Peralo evaluated Ms. Carlucci on 06/23/2009. She was reporting left greater than right knee pain.

Follow-up with Dr. Martinez on 07/03/2009. Ms. Carlucci was awaiting the neuropsychological evaluation. She was complaining of difficulty with concentrating and multitasking as well as headaches.

Page: 7

Ms. Carlucci was evaluated at Orange Regional Medical Center on 07/18/2009. She presented with left shoulder pain. She had fallen with no loss of consciousness. "The patient states she became dizzy and fell which is common since her head injury in April 09." She was recommended to follow up with Dr. Rohmer.

X-rays of the left forearm on 07/18/2009. Impression was no evidence of fracture noted of the left radius or ulnar.

X-ray of the left hand on 07/19/2009. Impression was no evidence of fracture or dislocation of the left hand.

X-ray of the left humerus on 07/18/2009. Impression was minimally displaced oblique fracture of the lateral aspect of the left humeral head. X-ray of the left elbow on 07/19/2009. There was no discrete evidence of fracture.

Follow up with Dr. Ronald Israelski, orthopedic surgeon on 07/20/2009. She presented with left shoulder pain since her injury on 07/18/2009. She was continuing under the care of Dr. Martinez, the neurologist for her head injury that occurred in April. Reviewed follow up with Dr. Israelski through 08/23/2010.

Reviewed physical therapy notes from Orange Regional Medical Center for the diagnosis of left proximal humerus fracture. Therapy notes start on 08/31/2009. Ms. Carlucci's left shoulder had been immobilized for six weeks. Reviewed therapy notes through 12/18/2009.

Dr. John MacGillivray, orthopedic surgeon at the Hospital for Special Surgery initially evaluated Ms. Carlucci on 09/02/2009. Impression was left proximal

Page: 8

humerus fracture stable. Minimally displaced. The plan was physical therapy to work on getting motion back and to work on strengthening.

MRI of the left shoulder on 11/03/2009. Impression was marked distal supraspinatus tendinopathy, extensor partial thickness tear, is favored versus severe tendonitis; subacromial bursitis; comminuted humeral head and neck fracture with extensive concomitant bone marrow edema and bony contusion; small glenohumeral joint effusion; fluid in the AC joint; mild hypertrophic degenerative osteoarthritic changes of the acromioclavicular joint with inferior osteophytes, that in the proper setting are consistent with an impingement syndrome.

Follow up with Dr. Martinez on 11/09/2009. Ms. Carlucci reported that she continued to have neck pain, which is now aggravated by the fact that she fractured her left arm. Forgetfulness had improved.

Neuropsychological evaluation by Dr. David Shumsky, neuropsychologist with the report date of 02/06/2010. Ms. Carlucci had been referred by Dr. Martinez. She described forgetfulness since her injury at Wal-Mart in April 2009. She had to hire additional people to complete all her work duties. She reported that she used to get more work done in 30-34 hours per week and she was getting in 70 hours per week. She had emotional complaints of depression, irritability, argumentative behavior, mood swings, social isolation, and crying spells. Her pain morbid level of intellectual functioning was estimated to be at least the average range and possibly into the high-average or superior range. "The combination of attention deficits and preservative errors on standardized tests and Ms. Carlucci self-reported problems with multi-tasking and overall efficiency indicate the presence of frontal lobe executive dysfunction". He diagnoses her

Page: 9

with "dementia due to head trauma". She also met diagnostic criteria for adjustment disorder with depressed mood. Her symptoms of anxiety met the criteria for posttraumatic stress disorder. He noted that individual psychotherapy was indicated to treat her anxiety and depression as well as to provide neuropsychological counseling regarding learning compensatory strategies to assist with her severe vocational problems. He recommends a cognitive rehabilitation with occupational therapy and speech therapy in order to treat the deficits noted above. He also recommended individual psychology and neuropsychological counseling. "I consider Ms. Carlucci to be partially disabled". He recommends vocational counseling as needed and neuropsychological reevaluation in 12-18 months. Raw data from this report was reviewed.

Dr. Samuel Koszer, neurologist evaluated Ms. Carlucci on 04/27/2010. Chief complaint was head injury 04/2009. Gets overwhelmed. She describes her injuries in Wal-Mart in April 2009. "She feels she is having difficulty performing her duties at her job because of continuing confusion, even though it is one year later. She runs an assisted living facility, and is very busy and requires a great deal of attention." "She has had some spells of dizziness three times a week on average. She is taking Flexeril for headaches and stiff neck". He discusses the evaluation done by Dr. Shumsky. The assessment was memory loss and confusion.

Reviewed individual psychotherapy notes with Dr. Shumsky through 04/27/2010. Reviewed billing records for Dr. Shumsky.

Page: 10

Reviewed records from Dr. Jack Nizewitz and Gary Lake, optometrist from 08/11/2010 through 01/21/2013. These records are handwritten with limited legibility.

Reviewed handwritten notes by Dr. Jacob Jacoby, psychiatrist starting on 10/10/2010. Follow-up note on 07/14/2011. "Speaks of her scatteredness and distractedness and decreased attention and concentration, which gets in the way of her function. Has to work harder to perform". Ms. Carlucci had not been taking her Ritalin but previously had a positive reaction in both focus and mood. Endocrinology did start her on thyroid medications. She was going to start again on Ritalin. Follow up on 01/01/2012. "The patient feels the Ritalin is helpful to her". Reviewed records through 01/01/2012.

Reviewed records from Dr. Stefan Chevalier, plastic and reconstructive surgeon. Ms. Carlucci was seen on 10/20/2010 to have an excision of a mass on her forehead.

Reviewed records from Dr. Robin Karpfen, gynecologist from 10/29/2010 through 01/21/2013. These records were routine and nonrevealing.

Reviewed records from Dr. Mary Davidian, ophthalmologist beginning on 12/09/2010 through 03/09/2011.

Reviewed records from Dr. Sergey Koyfman of Hudson Valley Ear, Nose, and Throat. He is an otolaryngologist. The records were from 01/28/2011 through 02/11/2011. These were regarding her thyroid nodules.

Page: 11

Reviewed records from Dr. Serhat Aytug, endocrinologist at Crystal Run Healthcare from 03/31/2011 through 03/02/2012. These records were routine and nonrevealing.

Follow up on 06/03/2011. Ms. Carlucci was complaining of palpitation. Follow-up stress test on 06/07/2011 was normal. Reviewed follow up with cardiologist through 10/19/2012.

Dr. Andrew Faskowitz of Crystal Run Healthcare evaluated Ms. Carlucci on 04/26/2012. She was reporting daily chronic headaches. The assessment plan was that Ms. Carlucci had chronic daily headaches status post head injury/postconcussive syndrome, "?analgesic rebound headaches". She was encouraged cessation Ultram/Zanaffex p.r.n. pain/spasticity. Referred to Dr. Ma for sleep study. Provigil during the day. Melatonin at night. MRA of the head for history of headache with mother with an aneurysm.

Dr. Kaiyu Ma at Crystal Run Healthcare evaluated Ms. Carlucci on 05/01/2012. She reported that she has had chronic headaches everyday since accident where she was hit in the head and suffered memory loss. She was unrefreshed after sleep. The assessment/plan was headache and obstructive sleep apnea. Recommendation was for a diagnostic polysomnogram.

MRA of the head without contrast 05/03/2012. Impression was an MRA of the circle of Willis was within normal limits.

Nocturnal polysomnography at Sleep Center at Crystal Run Healthcare on 05/06/2012. Impression was mild obstructive sleep apnea syndrome with oxygen desaturation. The recommendation was to pursue weight loss for ideal body

Page: 12

weight, avoid sedatives, hypnotics, sleep-aid and alcohol; avoid driving and/or operation of heavy machinery while sleepy; repeat NPSG with CPAP titration.

Follow up with Dr. Ma on 05/18/2012. Ms. Carlucci was continuing to complain of morning headache. CPAP was ordered.

Nocturnal polysomnography with CPAP titration on 06/12/2012, follow up with Dr. Ma on 06/18/2012. Ms. Carlucci was using nasal mask. She uses Ultram for headaches three times a day.

Dr. David McCoy of Medical Vocational Services evaluated Ms. Carlucci and authored a medical life care plan with vocational assessment dated 08/09/2012.

Reviewed records from Debra Sheafe, LMT (Licensed Massage Therapist). Letter from Ms. Sheafe on 09/04/2012. She describes Ms. Carlucci had been treating by her since December of 1999 with therapeutic and sports massage and reflexology. "Since her accident, Jenn has been experiencing headaches, muscle spasms in her back, neck, and shoulders, especially the rhomboids, she is incredibly sensitive to cold as it prompts her back muscles to contract with spasms. She suffers from forgetfulness, inability to remember. I remind her of appointment the day before and the day of calling her few hours before to remind her again. Jenn is not as active with her sports that she was before. She has limited range of motion with her left arm and neck. She no longer runs and can only do limited light weights, stretching, and balance work. Any stress or strain on the body in certain positions brings about referral pain through the shoulder, head, and neck." Note by Ms. Sheafe on 03/27/2009. "Client had head, neck injury from items falling from shelf on to her. Client is complaining of neck pain, shoulder pain, and headaches, lightheadedness, dizziness. The client has

Page: 13

limited range of motion of the head and neck". Reviewed therapy notes and billing through April 2012.

Follow up with Dr. Koszer on 09/24/2012. Dr. Koszer ordered a lab tests to rule out rheumatologic causes.

Ms. Carlucci was treated at Helen Hayes Hospital starting on 10/03/2012 for speech therapy. On initial evaluation, she was noted to have decreased organization of thought and topic maintenance secondary to attention deficits rather than a true language impairment. In November 2012, progress note reported "most notable change has been with the patient's expectations and acceptance of current level of functioning. The patient states she is beginning to realize that she most likely will not return to previous level of functioning. This improved insight will hopefully increase consistency in use of compensatory strategies. Continued speech therapy is warranted, however". Reviewed therapy notes through 12/04/2012.

Follow-up with Dr. Faskowitz on 11/28/2012. Ms. Carlucci had daily chronic headaches that were severe when she would wake up. "My opinion of Ms. Carlucci's chronic daily headache status post head injury/postconcussive syndrome." Ultram was noted to be helping. He recommended a TENS unit for her muscle spasms. Trial of Wellbutrin and Zanaflex.

Dr. David Shumsky performed a neuropsychological re-assessment with report date of 07/26/2013. Her ongoing physical complaints included variable sleep, headaches, loss of balance and dizziness, induced verbal comprehension, reduced depth perception, increased noise sensitivity, and daily pain in her neck and right shoulder as well as upper back. She also was dropping things from her

Page: 14

right hand. Her ongoing cognitive complaints included deficits in short term and long term recall, concentration, verbal and reading comprehension for "complex things", pronunciation of words, multitasking, taking longer to complete her usual activities, spelling, sequencing, paper work, shifting back and forth between various activities, difficulty with basic arithmetic and general disorganization. Her emotional complaints were moderate-to-severe feelings of depression with irritability and argumentative behavior, mood swings, near total social isolation, crying spells, increased appetite, complete loss of libido, and loss of all hobbies and interests due to her physical limitations, lack of free time, and feelings of exhaustion. She was more anxious. Ms. Carlucci put appropriate effort to the Ms. Carlucci had cognitive deficits involving visual attention, examination. concentration, and visual neglect, and visual abstract reasoning. "Her overall performance on these measures suggest frontal lobe impairment consistent with a coup-contrecoup injury." Dr. Shumsky continue the diagnosis of dementia due to the head trauma. He notes that depression, anxiety, fatigue, chronic pain, and prescription medication use for pain management may also contribute to her cognitive deficits. He recommends another course of cognitive rehabilitation in the form of occupational and speech therapies. He notes that she has a moderate level of depression and moderate level of anxiety. She was diagnosed with adjustment disorder with mixed anxiety and depressed mood. She also had posttraumatic stress ongoing disorder. He recommended individual psychotherapy and psychiatric consultation to treat her anxiety and depression. "If possible, psychotherapy should be provided by a clinical neuropsychologist who has the advantage of fully understanding the effects of brain trauma on her cognitive, emotional, social, and vocational functioning." Due to changes in visual processing and depth perception driving assessment was recommended. He recommended Ms. Carlucci cut back to work no more than 20 hours per week in order to engage fully in the recommended treatment program and not to

Page: 15

remain in a constant of physical exhaustion. "I also stated that clearly, if she were not the owner of her business she would have been fired or put out on disability immediately following her head injury." "The likelihood of significant recovery of her impaired cognitive function is extremely guarded." "After a reasonable period of review (i.e. two to four months), her hours may be increased or decreased based on her performance. However, I would not expect her to tolerate working much more than 20 hours per week and even that may continue to place her at risk for making medical errors. Ultimately, disability retirement may need to be considered."

Reviewed transcripts from Orange County Community College. Reviewed transcripts from Nyack College. Ms. Carlucci obtained a bachelor of science and organizational management on December 13, 1998. Her overall GPA was 3.71. Reviewed schooling reports from Nyack College where Ms. Carlucci obtained her Masters of Public Administration on January 31, 2001.

#### Other:

Reviewed transcripts from interviews of Ms. Carlucci's family members regarding their observations of changes they have seen since 04/10/2009. This included Rocco, Robert, Susan, Brhel, Linda, Iacovino, and Dave. I also reviewed the affidavit of Ms. Jennifer Klein, Ms. Carlucci's daughter. Also Laura Finch and Robert Rushing.

# Records from my office at Mount Sinai Medical Center and JFK Medical Center:

I initially evaluated Ms. Carlucci on 07/16/2012 in my office at Mount Sinai Medical Center. She described her injury at Wal-Mart in April of 2009 when a

Page: 16

rack collapsed and boxes hit her in the head. She describes that she was initially dazed and confused. She is a registered nurse and had asked not to call an ambulance because she was "embarrassed" to request medical assistance. She drove over herself to Horton Hospital because she was still symptomatic. She was initially dizzy, forgetting things and vomiting. She called her primary care doctor who referred her to a neurologist who she was continuing to treat with. She also had neck and back pain. We discussed the fact that she owns an assisted living facility and since the injury had had significant difficulty with managing it. Her son was helping her manage the business. She reported difficulty with attention and focus and difficulty with multitasking and memory and word finding problems. She had previously been tried on Ritalin but this worsened her headaches. The headaches are three to four days per week. She had had dizzy spells and this led to a fracture of her shoulder in summer of 2009. The complaints included decreased balance, decreased depth perception, and difficulty hearing in a loud room. Mood impairment included increased stress, anxiety, and depression related to her difficulty with managing her business and fear of losing her business. On examination she was pleasant but anxious. She had slow processing, decreased recall, impaired attention, and concentration. My initial impression was that she was status post mild severity traumatic brain injury in April 2009 with ongoing memory and mood and language impairment. She also had dizzy spells and decreased balance and decreased depth perception. I referred her for cognitive remediation and speech therapy. I recommended she continue to follow up with her neurologist with regards to the headaches.

I next saw her in follow up on 01/24/2013 at my office at JFK Medical Center. She had been started on tramadol for her headaches by her neurologist. This did help with her pain. Even with the tramadol she rated her pain a 4/10. She

Page: 17

was going for massage therapy to help with her neck and upper trapezius pain. I referred her for repeat neuropsychological testing. We discussed the potential of a nerve stimulant after I reviewed the neuropsychological testing.

I next saw her in follow-up on 03/21/2013. She had a flaring of low back pain and was also using Advil p.r.n. and seeing pain management. She was awaiting repeat neuropsychological testing. I continued the tramadol for her headaches and back pain.

I most recently saw Ms. Carlucci in follow up on 07/11/2013. She had been recently prescribed Wellbutrin to help with her stress, mood, and fatigue. She was considering Botox for her headaches. Her low back pain was better after her recent physical therapy. She was continuing pain management. Repeat testing had been done by Dr. Shumsky and we were awaiting results. Cervical pain was intermittent. We discussed the potential of acupuncture to assist with her headache management. We also discussed the addition of Ritalin but would base it on neuropsych test results once they are available.

#### Impression:

This is a 59-year-old woman who was in a good state of health and function when she was struck by falling boxes on 04/10/2009. She was dazed and confused afterwards meeting the criteria for mild TBI. CT scan and standard MRI of the brain do not have the resolution to evaluate for the axonal damage that would be expected from the traumatic brain injury Ms. Carlucci sustained on 04/10/2009. Neither of these tests measure the function of the neurons and axons of the brain. It is the dysfunction of the axons that underlie Ms. Carlucci's cognitive impairments.

Page: 18

Over this last four years Ms. Carlucci has sought appropriate medical attention for the symptoms and impairment that resulted from her injury. She has objective evidence of cognitive impairment on neuropsychology testing twice. The consistency of the impairments on recent testing speaks to the permanency of these impairments despite treatment. As a result of the traumatic brain injury she has cognitive impairments and mood impairment and chronic headaches. As a result of her injuries on 04/10/2009 she also has cervical derangement with chronic pain. The brain injury and pain have exacerbated her pre-existing sleep disorder increasing her fatigue. The combination of the impairments from her brain injury and her chronic pain has impacted her ability to do work as an owner of the assisted living facility. Ms. Carlucci will have a lifetime of medical cost relating to treatment of her chronic pain and impairments from her traumatic brain injury. I agree with Dr. McCoy's report regarding Ms. Carlucci's regarding her diminished capacity to manage her own home, loss of income sustainability and increased healthcare cost for goods and services. I agree with the costs outlined in the life care plan.

## Prognosis:

It is within a reasonable degree of medical certainty that Ms. Carlucci suffered a traumatic brain injury causally related to the accident of 04/10/2009 and the consequent impairments are causally related to this injury as set forth above. In that Ms. Carlucci's symptoms and impairments are still present more than four years after injury no further healing of injured brain tissue can be expected. Although therapies may offer marginal compensation of current deficits they will not be curative of underlying traumatic brain injury. These impairments are permanent. This injury does not decrease her life expectancy.

Page: 19

#### References:

- 1. Kurtzke JF, Jurland LT. The epidemiology of neurologic disease. In: Joynt RJ, editor. Clinical Neurology, Rev. Philadelphia: JB Lippincott; 1993.
- Faul M, Xu L, Wald MM, Coronado VG. Traumatic brain injury in the United States: emergency department visits, hospitalizations, and deaths. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2010.
- Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control. Report to Congress on mild traumatic brain injury in the United States: steps to prevent a serious public health problem. Atlanta (GA): Centers for Disease Control and Prevention; 2003.
- 4. Langlois, J. A., Rutland-Brown, W., et al. (2006). The epidemiology and impact of traumatic brain injury: a brief overview. J Head Trauma Rehabil, 21(5), 375–8.
- Kushner D. Mild traumatic brain injury, Arch Intern Med 1998;158:1617– 24.
- 6. Alexander MP. Mild traumatic brain injury: pathophysiology, natural history, and clinical management. Neurology 1995;45:1253–60.
- McKee, A. C., Cantu, R. C., Nowinski, C. J., Hedley-Whyte, E. T., Gavett, B. E., Budson, A. E., et al. (2009). Chronic traumatic encephalopathy in athletes: progressive tauopathy after repetitive head injury. J Neuropathol Exp Neurol, 68(7), 709–735.
- S. T. DeKosky, M. D. Ikonomovic, and S. Gandy, "Traumatic brain injury—football, warfare, and long-term effects," N Engl J Med 2010; 363(14)1293

  –6.
- 9. Ruff RM, Iverson GL, Barth JT, Bush SS, Broshek DK; NAN Policy and Planning Committee. Recommendations for diagnosing a mild traumatic brain injury: a National Academy of Neuropsychology education paper. Arch Clin Neuropsychol. 2009 Feb;24(1):3-10.

Page: 20

- 10. McCrory P, Meeuwisse W, Johnston K, et al. Consensus statement on concussion in sport: the 3rd International Conference on Concussion in sport held in Zurich, November 2008. Clin J Sport Med. 2009 May;19(3):185-200.
- 11. Mild Traumatic Brain Injury Committee, Head Injury Interdisciplinary Special Interest Group, American Congress of Rehabilitation Medicine. Definition of mild traumatic brain injury. J Head Trauma Rehabil 1993;8(3):86-8.
- 12. Gerberding JL, Binder S. Report to congress on mild traumatic brain injury in the United States: steps to prevent a serious public health problem. Atlanta, GA; Centers for Disease Control and Prevention, 2003.
- 13. Carroll, L. J., Cassidy, J. D., Holm, L., Kraus, J., & Coronado, V. G. (2004). Methodological issues and research recommendations for mild traumatic brain injury: the WHO Collaborating Centre Task Force on Mild Traumatic Brain Injury. Journal of Rehabilitation Medicine, (Suppl. 43), 113–125.
- 14. Menon DK, Schwab K, Wright DW, Maas AI, on behalf of The Demographics and Clinical Assessment Working Group of the International and Interagency Initiative toward Common Data Elements for Research on Traumatic Brain Injury and Psychological Health. Position statement: definition of traumatic brain injury. Arch Phys Med Rehabil 2010;91:1637-40.
- 15. Okie, S. Traumatic brain injury in the war zone. N Engl J Med. 2005 May 19;352(20):2043-7.
- 16. Warden, D. Military TBI during Iraq and Afghanistan wars. J Head Trauma Rehabil 2006, 21, 398–402.
- 17. Tanielian, T., & Jaycox, L. H. (2008). Invisible wounds of war: Psychological and cognitive injuries, their consequences and services to assist recovery. Santa Monica: CAO: RAND Corp.
- 18. Shenton ME, Hamoda HM, Schneiderman JS, Bouix S, Pasternak O, Rathi Y, Vu MA, Purohit MP, Helmer K, Koerte I, Lin AP, Westin CF,

Page: 21

- Kikinis R, Kubicki M, Stern RA, Zafonte R. A review of magnetic resonance imaging and diffusion tensor imaging findings in mild traumatic brain injury. Brain Imaging Behav 2012 Jun;6(2):137-92.
- 19. Niogi SN, Mukherjee P. Diffusion tensor imaging of mild traumatic brain injury. J Head Trauma Rehabil. 2010 Jul-Aug; 25(4):241-55.
- 20. Bigler ED, Maxwell WL. Neuropathology of mild traumatic brain injury: relationship to neuroimaging findings. Brain Imaging Behav. 2012 Jun;6(2):108-36.
- 21. Thornhill S, Teasdale GM, Murray GD, McEwen J, Roy CW, Penny KI. Disability in young people and adults one year after head injury: prospective cohort study. BMJ. 2000 Jun 17;320(7250):1631-5.
- 22. Whitnall L, McMillan TM, Murray GD, Teasdale GM. Disability in young people and adults after head injury: 5-7 year follow up of a prospective cohort study. J Neurol Neurosurg Psychiatry. 2006 May;77(5):640-5.
- 23. Konrad C, Geburek AJ, Rist F, Blumenroth H, Fischer B, Husstedt I, Arolt V, Schiffbauer H, Lohmann H. Long-term cognitive and emotional consequences of mild traumatic brain injury. Psychol Med. 2010 Sep 22:1-15. [Epub ahead of print]
- 24. McMillan TM, Teasdale GM, Weir CJ, Stewart E. Death after head injury: the 13 year outcome of a case control study. J Neurol Neurosurg Psychiatry. 2011 Aug;82(8):931-5. Epub 2011 Jan 31.
- 25. McMillan TM, Teasdale GM, Stewart E.Disability in young people and adults after head injury: 12-14 year follow-up of a prospective cohort. J Neurol Neurosurg Psychiatry. 2012 May 29. [Epub ahead of print]
- 26. Masel BE, DeWitt DS. Traumatic brain injury: a disease process, not an event. J Neurotrauma (August 2010); 27:1529–1540

I certify that the aforementioned statements made by me are true and to the best of my knowledge. These are based on my examination and records provided as discussed above. My opinions in this report are based upon a reasonable

Page: 22

degree of medical certainty. I am aware if any of these statements made are willingly false I am subject to penalty and punishment.

Brian D. Greenwald, MD

Medical Director JFK Jonson Rehabilitation Center for Head Injuries

Associate Medical Director JFK Johnson Rehabilitation Institute

Clinical Associate Professor

Robert Wood Johnson Medical School

NJ License # MA70730